Recombinant Human IL-12/IL-23 p40

Catalog Number: 11407-IL

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived human IL-12/IL-23 p40 protein Ile23-Ser328 Accession # P29460.1
N-terminal Sequence Analysis	Ile23
Predicted Molecular Mass	35 kDa

SPECIFICATIONS

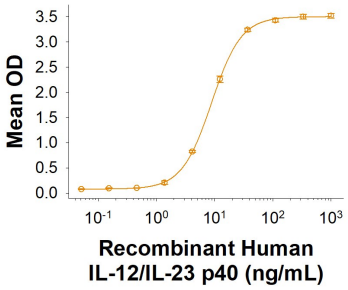
SDS-PAGE	38-45 kDa, under reducing conditions.
Activity	Measured by its ability to enhance IFN-γ secretion in NK-92 human natural killer lymphoma cells. The ED_{50} for this effect is 2.00-20.0 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute 10 µg size at 100 µg/mL and other sizes at 500 µg/mLin PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

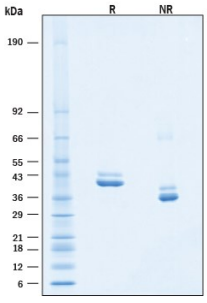
DATA

Bioactivity



Recombinant Human IL-12/IL-23 p40 Protein Bioactivity. Recombinant Human IL-12/IL-23 p40 Protein (Catalog # 11407-IL) enhances IFN-γ secretion in NK-92 human natural killer lymphoma cells. The ED_{50} for this effect is 2.00-20.0 ng/mL.

SDS-PAGE



Recombinant Human IL-12/IL-23 p40 Protein SDS-PAGE. 2 µg/lane of Recombinant Human IL-12/IL-23 p40 Protein (Catalog # 11407-IL) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 38-45 kDa, under reducing conditions.

BACKGROUND

Interleukin 12 (IL-12) is the founding member of the IL-12 family of heterodimeric cytokines, which have important immunological functions (1). It is a disulfide-linked, 70 kDa (p70) heterodimeric glycoprotein composed of a 40 kDa (p40) subunit and a 35 kDa (p35) subunit. Human IL-12p40 is a 40 kDa glycoprotein that shows considerable structural similarity to the extracellular domain of hematopoietin receptors (2). It is synthesized as a 328 amino acid (aa) precursor with a 22 aa signal sequence and a 306 aa mature region that contains a 92 aa fibronectin type III domain and an 84 aa Ig C2-like region and has a high degree of structural homology to type I cytokine receptors. There are two intrachain disulfide bonds and four potential N-linked glycosylation sites (3). Once made, it can exist in multiple forms including monomer, homodimer, heterodimer linked to p19 (forming IL-23), and heterodimer linked to p35 (forming IL-12) (1, 4, 5). Mature human IL-12p40 shows 66% aa sequence identity to mouse and rat IL-12p40 respectively. The secreted form of the p40 subunit inhibits IL-23 functions and abrogates IL-23-mediated anti-tumor effects (6). Characterization of the IL-12p40 proteins for binding and bioactivity showed that both the p40 monomer and dimer inhibited IL-12 binding to IL-12R (7).

References:

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4. Lankford, C.S. and D.M. Frucht (2003) J. Leukoc. Biol. **73**:49.
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7. Ling, P *et al.* (1995) J. Immunol. **154**:116.

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